

Remarks:

Reconsideration of the application is requested.

Claims 1 to 38 remain in the application. Claims 1 to 24 and 32 to 38 are subject to examination and claims 25 to 32 have been withdrawn from examination. Claims 1, 2, 4, 10, 15, 16, 23, 24, 35, and 36 have been amended.

In items 2 to 8 on pages 2 to 6 of the above-identified final Office action, claims 1 to 4, 6 to 11, 13 to 15, 23, and 33 to 38 have been rejected as being fully anticipated by Brinkerhoff et al. (U.S. 5,354,312; hereinafter "Brinkerhoff") under 35 U.S.C. § 102.

The rejections have been noted and some of the claims have been amended in an effort to even more clearly define the invention of the instant application. Support for the changes is found in FIGS. 3 and 4, for example, of the instant application.

Before discussing the prior art in detail, it is believed that a brief review of the invention as claimed, would be helpful. Claim 1 calls for, *inter alia*, a surgical clip applier, including:

a first jaw rotatably coupled to a clevis; and

a second jaw rotatably coupled to the clevis in opposed relation to the first jaw, the jaws having a respective longitudinal extent, at least one of the jaws defining a channel extending substantially along the longitudinal extent and being shaped to guide a surgical clip, the first and second jaws adapted to slidably apply the surgical clip with the channel.

The Brinkerhoff device defines jaw members 46, 48 (see FIGS. 6 to 9) having a semi-cylindrical gripping surface 94 with a "distal end portion of each jaw [having] a textured gripping surface 96 to facilitate tissue manipulation." Brinkerhoff at col. 5, lines 45 to 50. As shown in FIGS. 4 and 5, and as described with respect thereto in column 5, the gripping surface 94 is designed only to grasp a shaft. See Brinkerhoff at col. 2, lines 7 to 8.

On page 3 of the final Office action, the Examiner states that the two jaws of the Brinkerhoff device "oppose each other, as shown in Fig. 2, and are able to apply a surgical clip." (Emphasis added by applicant.)

The jaws of the present invention define a channel extending substantially along a longitudinal extent thereof and are shaped to guide a surgical clip, with the jaws slidably allowing application of the surgical clip with the channel. Simply put, the clip slides along the longitudinal extent of the jaws onto the tissue disposed between the jaws.

The Brinkerhoff gripping surface 94, however, is designed to grasp a shaft. It is not designed or even configured to house a surgical clip, let alone apply a surgical clip. Nowhere does Brinkerhoff disclose or even suggest a clip and, in particular, Brinkerhoff does not suggest applying a clip. In fact, sliding application of a clip is entirely against the teaching of Brinkerhoff because Brinkerhoff teaches various ways to prevent, entirely, any sliding operation. Every instance where the gripping surfaces 94 are described includes language that directs one skilled in the art towards positive gripping and away from any kind of sliding movement. See, i.e., col. 5, lines 20 to 21, 46 to 50, 54 to 55, 57 to 59. In fact, at least one gripping land 98 is used to "localize and concentrate gripping pressure . . . to faciliat[e] secure and firm grasping . . ." See col. 5, line 67, to col. 6, line 4.

To make the grasping secure and firm, Brinkerhoff provides three separate structures:

- 1) gripping land 98;
- 2) gripping teeth 100 (see col. 6, lines 19 to 21); and
- 3) gripping surfaces 94.

Col. 6, lines 24 to 26, specifically indicate that the gripping surface 94, itself, can be textured for more secure and firm grasping.

Because Brinkerhoff only teaches "secure and firm grasping" of the anvil shaft 24, it cannot be said to anticipate the clip sliding channel of claim 1 of the instant application.

On page 5, of the final Office action, the Examiner states that "[e]ach jaw in Brinkerhoff's device has a channel (94) capable of guiding clips. The channel [94] is an enclosure and would enclose the clip on two sides if a clip were inserted into that space." (Emphasis added by applicant.)

It is respectfully submitted that Brinkerhoff does not have a "channel (94) capable of guiding clips." Brinkerhoff includes the following paragraph describing the gripping surface 94 and the land 98 beginning at col. 5, line 60:

In the embodiment of the jaw members illustrated in FIGS. 6 and 7, means are provided for enhancing gripping pressure of the jaw members with the associated anvil shaft. In this embodiment, gripping pressure is enhanced by the provision of at least one elongated gripping land 98 which extends along the length of the respective jaw portion, i.e., circumferentially of the semi-cylindrical gripping surface. As will be appreciated, the provision of this gripping land 98 acts to localize and concentrate gripping pressure exerted by the jaw members 46, 48, by effectively reducing the surface area through which gripping force is applied, thereby facilitating secure and firm grasping of the

anvil shaft. As will be appreciated, the arrangement of the jaw portions mechanically enhances gripping engagement with the anvil shaft, in distinction from the provision of a rubberized gripping surface or the like intended to provide an increased coefficient of friction for the jaw portions.  
(Emphasis added by applicant.)

Therefore, Brinkerhoff does not disclose or suggest any kind of depressed channel. Instead, element 98 is a raised structure. The Examiner may be interpreting a side of the raised land 98 with an adjacent portion of the gripping surface 94 to be a two-sided "channel." However, as set forth in claim 1, these structures cannot be used to define a channel extending substantially along a longitudinal extent and shaped to slidably guide and apply a clip. Any hypothetical attempt to place a clip between the jaws would be useless because the two sides of the land 98 and the gripping surface 94 are insufficient to hold a clip therein. Consequently, any compressive force imparted by the jaws 46, 48 to the hypothetical clip would cause it to spring out from the jaws. Such a feature defeats the possibility of clip application.

Finally, on page 5, of the final Office action, the Examiner states that "teeth (96) are considered to be jagged enough [from the view shown in Fig. 6] to be able to pierce tissue."  
(Emphasis added by applicant.)

It is respectfully believed that the "teeth" of element 96 can only be considered as non-piercing. As set forth above, all Brinkerhoff jaw features are designed to grasp the anvil shaft 24 without sliding. Nowhere does Brinkerhoff disclose or suggest piercing of tissue, let alone disclose at least one jaw provided with teeth to "puncture and damage tissue adjacent to the surgical clip" as set forth in claim 1. The pyramid-shaped texture of the "gripping surface 96" merely grips, it does not puncture and damage tissue.

With regard to claim 15, the Examiner rejects the claim based upon Brinkerhoff and further states that "Applicant should better claims the *structures that give the mechanical advantage*, or use functional language to convey the increased relative strength of Applicant's end effector." (Emphasis original.)

Claim 15 calls for, *inter alia*, an endoscopic surgical instrument, including:

a clevis;

a first end effector rotatably coupled to the clevis; and

a **first linkage** including a first rotating element rotatably coupled to the clevis and coupled to a first push/pull wire, and a **second element** rotatably coupled to the first rotating element and rotatably coupled to the first end effector for increasing mechanical advantage of effector closure.

Applicant has added the phrase " for increasing mechanical advantage of effector closure" to claim 15.

As clearly shown in FIGS. 2 and 4 and described on pages 16 to 17 of the specification of the instant application, the mechanical advantage is provided by coupling a proximal end of each **first linkage 62, 66** to a respective pull/push wire 58, 60 and rotatably coupling the distal end of the first linkage 62, 66 to a proximal end of a **second element 64, 68**. The distal end of each second linkage 64, 68 is rotatably coupled to a respective tang 38, 40. The linkage 62, 66 is not merely connected. It includes an attachment at either end thereof. The same is true for the second element 64, 68.

The combined coupling of each jaw 22, 24 to each pull/push wire 58, 60 forms a combination linkage that substantially amplifies the force from the pull/push wires to the jaws as compared to prior art devices, in particular, to Brinkerhoff.

Nowhere does Brinkerhoff disclose or suggest such a combined linkage. Brinkerhoff merely connects a single push rod 54 to both jaws 46, 48 and makes this connection directly through a single linkage 66, 68. There is no second element as set forth in claim 15 of the instant application. Nor does Brinkerhoff disclose or suggest any element increasing mechanical advantage of a closing of the jaws 46, 48.

Based upon the description of the elements 62, 64, 66, 68 in the specification, it is respectfully submitted that the structure that gives the mechanical advantage is already sufficiently claimed.

Clearly, Brinkerhoff does not show an instrument as recited in claim 15 of the instant application.

Claims 23, 24, 35, and 36 have been amended to even more clearly define the two portions of the connection between the wire and the end effector. No new matter has been added.

It is respectfully believed that Brinkerhoff does not disclose or suggest the two piece structure of claims 23, 24, or 33 to 36.



It is accordingly believed to be clear that none of the references, whether taken alone or in any combination, either show or suggest the features of claims 1, 15, 23, or 33 to 36. Claims 1, 15, 23, and 33 to 36 are, therefore, believed to be patentable over the art. The dependent claims are believed to be patentable as well because they all are ultimately dependent on claims 1, 15, 23.

Finally, applicants appreciatively acknowledge the Examiner's statement that claims 5, 12, and 16 to 22 "would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims." In light of the above, applicants respectfully believe that rewriting of these claims is unnecessary at this time.

In view of the foregoing, reconsideration and allowance of claims 1 to 22 are solicited.


In the event the Examiner should still find any of the claims to be unpatentable, counsel would appreciate receiving a telephone call so that, if possible, patentable language can be worked out. In the alternative, the entry of the amendment is requested, as it is believed to place the application in better condition for appeal, without requiring extension of the field of search.

If an extension of time for this paper is required, petition for extension is herewith made.

The extension fee for response within a period of two (2) months pursuant to Section 1.136(a) in the amount of \$420.00 in accordance with Section 1.17 is enclosed herewith.

Please charge any other fees that might be due with respect to Sections 1.16 and 1.17 to the Deposit Account of Lerner and Greenberg, P.A., No. 12-1099.

Respectfully submitted,

  
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For Applicants

GLM:cgm

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